



LUND UNIVERSITY

Faculty of Medicine

Department of Health Sciences

Occupational Therapy & Occupational Science

A critical examination of evidence and its relation to  
occupation in scientific occupational therapy articles  
– A scoping inspired study

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Bachelor thesis

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**Keywords:** Evidence-based Practice – Human Occupation – Health Care – Occupational Science –



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### Abstract

The introduction of scientific research evidence through evidence-based practice (EBP) into occupational therapy can potentially be used to reform and transform the profession, both as a limiting and defining process as well as a broadening and developing process. Two different approaches to the topic of EBP were found in this review. They are comprised of a position favoring a traditional evidence-hierarchy centered on RCT-studies and a multidimensional perspective incorporating qualitative data to the evidence-base of occupational therapy practice. Articles linking the evidence-perspectives to the key concept of occupation are few and predominantly found in the group that conveys a multidimensional perspective on evidence. How occupational therapists in their studies relates their comprehension of the concepts of evidence and evidence-based practice to the key concept of occupation is an important factor in creating an research environment of possibilities, in which occupational therapy fully can position itself, within the future world of health and health care.

Keywords: Evidence-based Practice – Human Occupation – Health Care – Occupational Science – Occupational Therapy

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## MEDICINSKA FAKULTETEN

Lunds universitet

Institutionen för hälsa, vård och samhälle

Arbetsterapi och aktivitetsvetenskap

2013-09-27

En kritisk granskning av uppfattningar om begreppet evidens och dess relation till 'occupation' i arbetsterapeutiska vetenskapliga artiklar – en 'scoping' inspirerad studie.

Jens N. Roved

### Abstrakt

Introduktionen av vetenskaplig evidens genom evidens-baserad praxis till arbetsterapi kan potentiellt användas till att ombilda och transformera yrket både på ett avgränsande och ett definierande sätt och vidare som en breddande och utvecklande process. Två olika synsätt på ämnet evidens-baserad praxis identifierades i denna litteraturstudie. De består dels av ett synsätt som gynnar en traditionell evidenshierarki centrerad kring RCT studier och dels av ett synsätt som gynnar ett multidimensionellt perspektiv där kvalitativa data inkorporeras i den praktiska arbetsterapiens kunskapsbas. Artiklar, som kopplar dessa perspektiv på evidens till det centrala arbetsterapeutiska begreppet aktivitet ("occupation"), finns främst i den grupp som förmedlar ett multidimensionellt perspektiv på evidens. Hur arbetsterapeuter i deras forskning relaterar sin uppfattning av begreppen evidens och evidens-baserad praxis till det centrala begreppet aktivitet konstituerar en viktig faktor i skapandet av en forskningsmiljö bestående av möjligheter, där arbetsterapi i sin hela potential kan positionera sig inom framtidens hälsa och hälsovård.

Nyckelord: Evidens-baserad Praxis – Mänsklig aktivitet – Hälsovård – Aktivitetsvetenskap – Arbetsterapi.

Kandidatuppsats

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# 1. Introduction

The demand for scientific evidence in all health care branches has been spreading like wildfire since the introduction of evidence-based medicine some forty years ago. Evidence-based practice (EBP) was coined in the 1980's as an answer to demands of bringing scientific evidence out into the clinical practice setting. Since then evidence-based practice has changed health care policies in several countries around the world and evidence-based practice is no longer something which may happen in some far away future. It is here and making a big impact that has stirred up both enthusiasm and controversy throughout the entire scope of health care branches including occupational therapy.

As with everything 'new' this has not gone about without its champions and critics. Evidence-based practice has been embraced as a way to promote occupational therapy through evidence that 'it works', as a means to bring research into practice, as a way to educate occupational therapists about how to obtain best practice and as a way to standardize and secure high quality practice throughout the profession both in a macro, meso and micro perspective<sup>1</sup>. The notion of demonstrating that 'it works' stems from critique brought upon occupational therapy that in many fields where occupational therapists have traditionally been finding work, there has been a lack of research evidence supporting occupational therapy practice. Other critical voices however have raised concern about whether evidence-based practice can fill the role of bringing the multi-dimensional focus of occupational therapy into practice.

The introduction of scientific research evidence through evidence-based practice into occupational therapy can potentially be used to reform and transform the profession, both as a limiting and defining process as well as a broadening and developing process. The controversy provoked by such a process can be observed through the concomitant discussions of its key components in peer reviewed academic journals. In occupational therapy journals however any debate about evidence-based practice can be hard to follow as it happens in different journals, often hidden in articles that have other primary foci or being studies related to barriers preventing the implementation of evidence-based practice. There seems to be very little direct interaction amongst occupational therapists writing articles for the journals concerning how the concepts of evidence and evidence-based practice are approached in occupational therapy research and practice. Maybe this has to do with the topic being controversial. In any case I am not aware of any attempt so far as to make a comprehensive investigation into how evidence-based practice and the notion of bringing scientific

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<sup>1</sup> In the understanding of global occupational therapy organizations, nation-wide organizations and the individual clinical setting.

evidence into occupational therapy practice have affected the general discussion in occupational therapy circles and whether such discussions bears any relations to the main concept of occupation.

## 2. Background

### Evidence

The generally accepted way of generating evidence throughout the western world is through science. Science stems from philosophy and goes all the way back to Plato and Aristotle (Fine, 2003; Persson, & Erlandsson, 2002). Evidence in a positivistic sense is generated through accumulation of knowledge based upon a dichotomy between the studies of an objective world by a perceiving subject using his/her mind and senses (Feyerabend, 1970; Kragh, & Pedersen, 1991). Thus building up a knowledge base through which one can “...*have a conceptual justification for a belief or action*” (Goodman, 2002, p.2). This correlates with the traditional ideas of Plato who defined knowledge as “justified true belief” as opposed to a state of ignorance in which one can either hold false beliefs or lack beliefs of how the world works (Fine, 2003; Goodman, 2002). Despite criticism the ontology and epistemology of the western world positivist orthodoxy, with its corresponding view on the nature of reality as mechanistic, has prevailed (Rigney, 2001). Owing its current predominant status not least to the fact that the scientific philosophies of the West have been spread to all corners of the world through colonization and suppression (Rigney, 2001).

### Knowledge economy

According to Kragh & Pedersen (1991) research policy is based on the assumption that science should be beneficial to society. The target of research policy is to capitalize the societal benefits of the investments made to uphold the various fields of research. Which scientific disciplines are allowed to prevail is a question of priorities based on these assumptions and takes place within the broader policy framework of *Research and Development*, which again correlates with the positivistic viewpoints on science (Kragh & Pedersen, 1991). In this context knowledge economy is described as an economy that is based on the notion that advance of technical and scientific knowledge can and should be translated into economic growth (Drucker, 1969; Powell & Snellman, 2004).

Combined with higher education, science constitutes a powerful cultural and social institution within nation states, which markets a knowledge economy regarded as authoritative, neutral, universal and truthful (Davis-Floyd, 2001; Kragh & Pedersen, 1991; OECD, 1996; Rigney, 2001). This combination creates a closed circular dynamic system in which research and development

policies demands return of society's investments in science in the form of economic growth. Science in turn markets the knowledge economy, where knowledge and technology drives productivity and economic growth, while research and development policies are based increasingly on the ability of scientific knowledge to drive productivity and economic growth (Kragh & Pedersen, 1991; OECD, 1996; Petersen, 2009; Powell & Snellman, 2004; Rigney, 2001). In the health care context the purpose of this system of policies is to optimize the human health status through biomedical science and is linked to the role of science in the production society (Davis-Floyd, 2001; Kragh & Pedersen, 1991).

Paradigms:

Across the different branches of science in its present form are scattered different kinds of paradigms for study of topics that are of scientific interest for a discipline. Paradigms represent frameworks that guide research within a field of inquiry (Kuhn, 1996; Morgan, 2007). These are called primary paradigms and the research associated with them called basic science (Hillcoat, 1975). As such primary paradigms can be used to guide whole disciplines, such as medicine (Morgan, 2007). Secondary paradigms shares the theoretical foundation with the primary paradigm but are affiliated with the technology of practice of a discipline and the rules that guides it, often associated with an educational prerequisite, like studying to become a professional practitioner (Hillcoat, 1975). This study will focus on two primary paradigms often associated with being at the root level of health and health care, namely the *biomedical paradigm* (also referred to as the reductionist paradigm, and technocratic model of medicine) and the *holistic approaches*, which in this study is viewed as an umbrella paradigm covering the emergence of humanistic and holistic paradigms (Davis-Floyd, 2001; Medin & Alexandersson, 2000). A circumstance not uncomplicated seems to be that occupational therapy and occupational science try to embrace primary paradigms that may prove incompatible, i.e. both the *biomedical* and the *holistic* paradigms.

The dominant paradigm in health care practices all over the western world is the biomedical paradigm, which is founded on the principles of the reductionist paradigm stemming from positivism (Cunningham & Wilson, 2011; Engel 1992; Hammell, 2011; Mehta, 2011). The Biomedical Paradigm also referred to as the Biomedical Model is historically founded in the concept of Mind-Body dualism and the analytic method of Descartes, and in the positivistic philosophy of science building on empirical research and generalizability (Cunningham & Wilson, 2011; Hammell, 2011; Mehta, 2011). Research based in this paradigm is predominantly quantitative, highly conceptualized and emphasizes a deductive-objective-generalizing approach in its research methodology. Consequently the bio-medical paradigm propagates the view that a state

of healthiness is strictly affiliated with freedom from pain, illness and disability (Law & Macdermid, 2008; Medin & Alexandersson, 2000).

The holistic approaches constitute an emerging paradigm founded in humanism and naturalism in which many allied health care professions base their qualitative traditions of inductive-subjective-contextual approaches and has its philosophic roots in interpretivism (Bauer-Freitag, 1999; Christiansen & Baum, 2005). The pragmatism of Dewey (1933) considers the reflective thinking in action and the holistic position that rejects mind-body dualism. In the holistic approach the experience of a state of healthiness is not necessarily opposed to illness, disease or disability. It is entirely possible through this outlook to experience health and well-being even if being ill or disabled (Persson, 2001). This is also reflected in the broader definition of health established by the World Health Organization (1946) and (1986): *“Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity”*. *“Health is created and lived by people within the setting of their everyday life: where they learn, work, play and love”*.

Critical social theory, one of the holistic approaches, goes beyond the technical and analytic methodology of knowledge generation and incorporates the Aristotelian concept *phronesis* as a source of knowledge. Schwartz and Sharpe (2010) refer to this as practical wisdom. Morgan (2007) refers to such an approach in general social science as a pragmatic abductive-intersubjective-transferable approach. The pragmatism of this approach gives attention to the intersubjectivity of social processes underlying knowledge generation through joint action or collaborations in which transitions of information back and forth between different methodologies is preferred rather than abolished (Morgan, 2007). According to Taylor and White (2000) knowledge, in the reflexive practice, rather than being deployed as an authoritative resource, should be identified as multifaceted and open source.

The notion that the philosophy underpinning most allied health care services draws upon material from both the biomedical as well as the emerging holistic paradigm is regarded as a fundamental starting point when wanting to investigate how evidence-based medicine and evidence-based practice influence health care as a whole and all its different branches including occupational therapy (Medin & Alexandersson, 2000).

#### Evidence hierarchy

The scientific method emerged in the 17<sup>th</sup> century from the contrast between the Platonian and Aristotelian schools of thought and from European philosophers seeking to defy skepticism and



create an absolute foundation for knowledge (Feyerabend, 1970; Rigney, 2001; Shuttleworth, 2009). The scientific method demands that the method of investigation is to be based on empirical evidence derived from “...*systematic observation, measurement, and experiment, and the formulation, testing, and modification of hypotheses*” (Oxford Dictionaries, 2013).

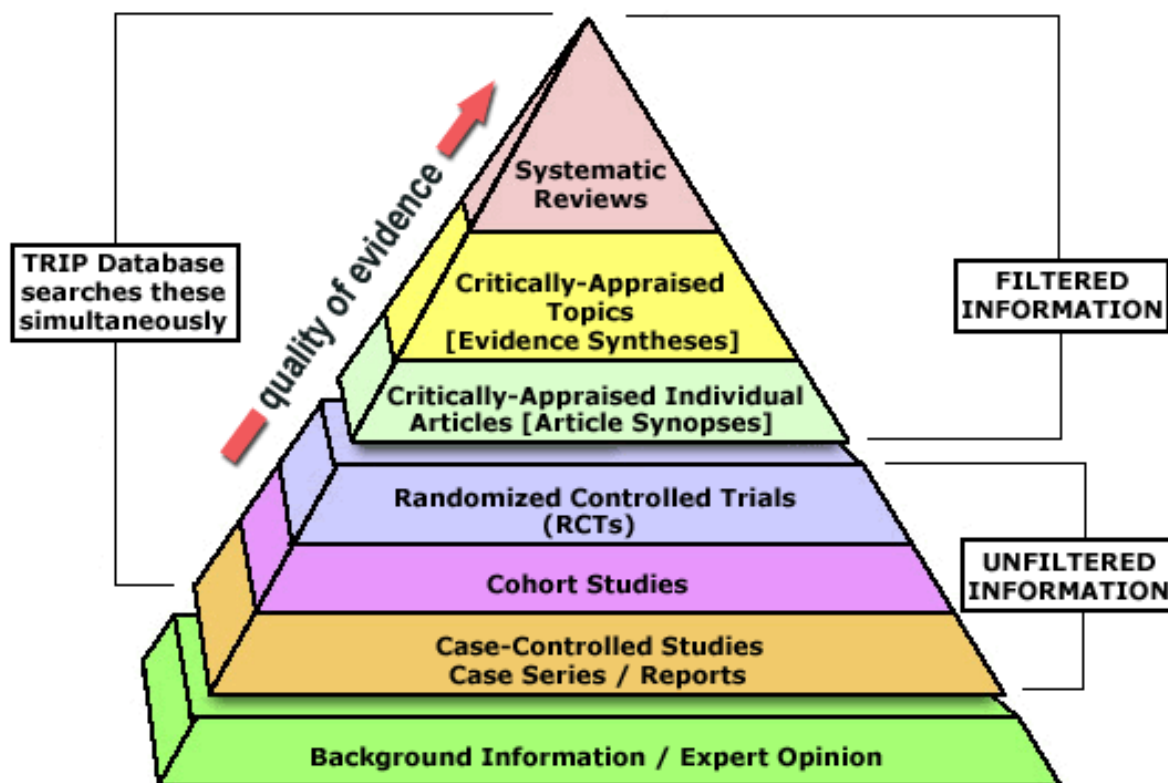
The bio-medically dominated philosophy of basing practice guidelines on hard scientific evidence has garnered support both from within the world of health, and social care as well as from the outside world of science-based economy and policy (Garner, Meremikwu, Volmink, Xu, Smith, 2004). Empirical evidence alone however is not concerned with the quality or strength of the evidence (Goodman, 2002). To define the quality and the strength of the evidence a single-hierarchy model of evidence was developed in the 1970s as a standardized instrument to validate and appraise quantitative research derived through the use of the scientific method and guide its application into clinical practice (Arbesman, Scheer & Lieberman, 2008; Scheer, Arbesman, & Lieberman, 2008; Table 1). The single-hierarchy model of evidence is guided by the principle that higher internal validity results in higher ranking. The four levels of individual study methodologies can be further qualified by statistic reviews seen in the top three levels in the model (Petrisor & Bhandari, 2007). The model is directly backwards traceable from the post-positivism of the day to the bio-medical paradigm and the positivistic methodology. It is used to guide health care standards where focus rests on systemic standardized procedures and serve as a guideline for fixing selective identified problems by rank of evidence (Bendixen, Borg, Pedersen & Allenborg, 2005).

Other evidence hierarchies have been developed based on the inclusion of qualitative research but they have not gained the same clout due to the dominance of the biomedical paradigm (Upshur, 2003). In the result and discussion the single-hierarchy model of evidence will be referred to as ‘the current evidence hierarchy’ as it is the only evidence-hierarchy carrying general worldwide scientific consensus.<sup>2</sup>

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<sup>2</sup> In some references and in a few occasions in this work this evidence-hierarchy can also be referred to as ‘the traditional evidence-hierarchy’, ‘the scientific evidence-hierarchy’, ‘the biomedical evidence-hierarchy’ or simply ‘the evidence hierarchy’. This is usually in conjunction with one or more references labeling it so.

Table 1: *The Evidence-based medicine pyramid representing the single-hierarchy of evidence (with kind permission from Jan Glover).*<sup>3</sup>



EBM Pyramid and EBM Page Generator, © 2006 Trustees of Dartmouth College and Yale University. All Rights Reserved. Produced by Jan Glover, David Izzo, Karen Odato and Lei Wang.

### Evidence-based practice

Although there have been multiple attempts at making a final definition of evidence-based practice, there are several small variations in the understanding and utilization of EBP, which are emerging out of the different environments of allied health care (Law & MacDermid, 2008). A quick look through Google searching for evidence-based practice revealed at least 3 differently drawn models of evidence-based practice. The most commonly used definition however is the one by Sackett, et. al. (2000) stating that evidence-based practice is established through the integration of best available research evidence paired with clinical expertise and client preferences.

### Occupation, occupational therapy and occupational science

At its historical foundation occupational therapy rests upon the notion that the profession should be free to utilize knowledge from wherever it exists and contribute to knowledge generation in its own right in the purpose of creating concrete responses to complex social needs (One In Five, 2013).

From the time of the great wars occupational therapy became historically affiliated with analysis of

<sup>3</sup> Further information about the model can be found here: <http://www.ebmpyramid.org/>

activities related to the body function concept and this has been pre-dominant in occupational therapy up to the 1970s. It even constitutes much of the in-ward occupational therapy practice of today (Creighton, 1992; One In Five, 2013). However occupational therapy research, education and theory today has been evolved to be based on the principal relationship between occupation, health and well-being (Christiansen & Baum, 2005; Hocking & Wright-St. Clair, 2011; Law, 1991; Law, Steinwender & Leclair, 1998 & Persson, 2001). This means that occupational therapy can be aligned both with the biomedical functional outlook on health as well as with more phenomenological traits affiliated with the experience of health (Mattingly & Fleming, 1994). Furthermore human occupation is idiosyncratic to the person and is often described through dynamic systems theory as the interaction between person, environment and task (Christiansen & Baum, 2005; Law, 1991; Townsend & Polatajko, 2007; Kielhofner, 1997; Kielhofner, 2008; Persson, 2001).

The study of human occupation as seen from an occupational science perspective has evolved the concept to encompass human occupation as a performance art that includes all human beings and in which humanity is enacted through everything that we do (American Occupational Therapy Association, 1995, p. 1015; Christiansen & Baum, 2005; Guajardo & Kronenberg, 2013, in press; Hocking & Wright-St. Clair, 2011; Kronenberg, 2013, in press; Persson, 2001; Townsend & Polatajko, 2007; Wilcock, 2006). Persson, Erlandsson, Eklund & Iwarsson, (2001) and Persson & Erlandsson (2005) explains how value and meaning play an important role in understanding clients perception of daily life. This through describing occupation from micro, meso and macro perspectives, as well as incorporating a value perspective consisting of concrete, symbolic and self-reward occupational values. Such an approach to occupation requires the occupational therapist to develop a more sympathetic relationship with the client rather than an objectivity-seeking one (Persson, et. al. (2001).

Thus occupational therapy has through occupational science been expanded into the social field and the study of occupational justice. Occupational therapy as seen through this perspective includes inquiries into how power and value rationalities interact with 'what we do' and 'what we do not do' as both action and inaction is equally identified as a part in human occupation (Kronenberg, Pollard & Sakellariou, 2011; Townsend & Polatajko, 2007; Wilcock, 2006). Occupational Science contributes to forming knowledge, based on research, theory, and praxis, which is affiliated with enabling human occupation and participation (Bendixen, Borg, Pedersen & Allenborg, 2005).

Occupation and its relations to health, meaning and well-being are at the heart of occupational therapy. Evidence and evidence-based practice are important tools for occupational therapists to provide arguments and solid grounding for a continuation and further development of the profession. To investigate into the discussions of these key components can give a valid clue as to the direction of the profession. However, the tension caused by the embracement of contradicting research paradigms, by others called a “fundamental paradigmatic clash” (Wilding & Whiteford, 2007), and an uncertain connection between notions of evidence and the key concept of occupation, certainly call for a critical investigation into how these key components are being addressed within the field. Not least to get a valid clue as to the direction of the profession concerning this issue.

### 3. The aim of the study

To investigate how the notions evidence and evidence-based practice and their relation to the main concept of ‘occupation’ are described and discussed in recent peer reviewed Occupational Therapy journals.

### 4. Method

Literature reviews have grown in prevalence as a result of the introduction of evidence-based practice and the following need to disseminate a growing body of research literature (Forsberg & Wengström, 2008). There are a number of different ways in which one can undertake a literature review, some more specified than others. It is however important that there is clarity about the different methodologies used for literature reviews. This study is centered round the methodology of a scoping study which is intended for the mapping out of relevant literature in an area of interest but in a broader and more inclusive way than for example a systematic review would (Arksley & O’Malley, 2005). Due to the time constraints of a bachelor thesis the general practice of presenting the entire material in the scoping methodology was abandoned in order to instead better meet the aim of the study. Besides mapping out relevant literature scoping can also be used to identify gaps in existing research literature and the methodology consisting of 5 stages identified by Arksley & O’Malley (2005) of which stage 1 is *to identify the research question*, stage 2 *to identify relevant studies*, stage 3 *to make a study selection*, stage 4 *charting the data* and stage 5 *collating, summarizing and reporting the results* is transferrable to the aim of this study.

#### Stage 1. Identifying the research question

The process behind the reasoning leading to the research question has taken place over several months while studying occupational therapy at Lund’s University, Sweden. It is a result of the

authors' reflection on literature in the field of occupational therapy as well as reflective conversations with students, teachers, supervisors and visiting lecturers. This can be viewed as resembling the 'consultation exercise' identified by Arksley & O'Malley (2005). Over time the question of how occupational therapists position themselves on the topic became of critical interest since we occupational therapists are actually the ones most near at hand when it comes to defining our own professional future. Since the purpose of this study is to investigate worldwide, within a relatively short time-span, it was deliberated that any written debate about evidence and evidence-based practice, which could be traced in an unbiased way, would most probably take place in peer-reviewed journals. Such a debate can be hard to track at for example live events, internet-forums or through expert interviews without the risk of being subjectively selective. Articles in peer-reviewed journals also play an important part in communicating and developing the profession. To ensure that the debate was specifically reflecting the position of occupational therapists it was also decided to investigate only articles written in occupational therapy journals.

The identified research question of this study is to critically investigate how occupational therapists position themselves towards the topic of evidence-based practice in recent peer-reviewed occupational therapy journals and how they in the ensuing debate relate to the key concept of occupation.

## Stage 2. Identifying relevant studies

Arksley and O'Malley (2005) suggest that decisions about the methodology should be made at the outset of the study. Moreover they give credit to the additional dimensions to the reviewing process added by involving others with knowledge of the topic being researched and they suggest also incorporating a qualified librarian for identifying the best search strategy. Therefore it was decided early in the process to involve an occupational science researcher and teacher at the department of occupational therapy at Lund's University in the process of finding a relevant methodology. This involvement included finding and deliberating relevant search databases and key terms of interest and partake in charting and reviewing the data. As the majority of peer-reviewed articles would most likely be found in electronic data bases the search strategy decided upon was to conduct a search of keywords in electronic databases available through the university library.

The key terms identified for this study were '*evidence*' due to its role in guiding evidence-based practice, '*evidence-based practice*' as the main focus of investigation and '*occupational therapy*' was chosen since the research question incorporates any relation between the positions on evidence-based practice and how that relates to occupations as the primary focus area of occupational

therapy. In order to identify recent occupational therapy literature involving discussions of the terms ‘evidence’ and ‘evidence-based practice’ a search through the three databases PubMed, Cinahl, and PsycINFO was performed after deliberation of searching in the databases giving the broadest range of available journals and inclusion criteria. Added to the key terms were ‘*philosophy*’, and ‘*social science*’ due to the multi-dimensional nature of occupational therapy mentioned earlier.

The first search (#1) consisted of the key words ‘occupational therapy’ and ‘evidence’ and yielded a total of 3382 results. For the results to better reflect the aim of this study a new refined search was done containing both the key words in the title. This gave out a total of 255 articles. The second search (#2) performed consisted of the key words ‘occupational therapy’ and ‘evidence-based practice’. This yielded a total number of 916 articles. The same method as mentioned in search #1 of refining the search for articles by containing both key words in the title was performed and gave a total of 95 articles.

A third (#3) and fourth (#4) search was also performed in order to incorporate key words such as ‘social science’ and ‘philosophy’. These key words were chosen due to the contradicting paradigms of the field and to obtain a more holistic coverage of the search. To reflect the aim of this study the key word ‘evidence’ was added to ‘occupational therapy’ thus giving a search consisting of the key words ‘occupational therapy’ + ‘evidence’ + ‘philosophy’ for the third search and ‘occupational therapy’ + ‘evidence’ + ‘social science’ for the fourth search. The title search was limited to ‘occupational therapy’ with the other key words being free text. In total the third search with ‘philosophy’ added gave a total of 149 articles. When this search was performed with ‘occupational therapy’ in the title it yielded a total of 24 articles. The fourth and final search using the additional key word ‘social science’ yielded a total of 475 articles. Again the search was performed with ‘occupational therapy’ in the title and now yielded a total of 30 articles. This initial search result of all four searches gave a total of 404 hits.

### Stage 3. Study Selection

#### Inclusion and exclusion criteria

Arksley & O’Malley (2005) adopted from the systematic review the idea of developing a set of inclusion and exclusion criteria in order to eliminate results that are not relevant for the aim of the study. Instead of applying them as search parameters at the outset of the project the inclusion and exclusion criteria are applied after the literature search in order to secure a familiarity with the material on which the relevance of the different articles could be determined. The inclusion criteria for this study are articles in English in peer-reviewed occupational therapy journals through the

period of 2000-2011, found through the four searches described in stage 2. The exclusion criteria consist of non-article material such as WFOT-bulletins, book-reviews and commentaries. Excluded are also all articles from before the year 2000 and all articles not in English. Duplicates are excluded after the charting process.

#### Stage 4. Charting the data

In stage four the research on evidence and evidence-based practice was charted. The emphasis on mapping out the positions towards the pre-identified terms of interest and if and how those positions are related to the central concept of occupation presents a step further in analyzing key concepts within research literature varying greatly in main focus. The 108 articles remaining were reviewed and categorized separately by the author and one occupational scientist in order to map out their place in the field of occupational therapy and the databases. Then a meeting was held in which the categories were discussed and a unified categorization was reached consisting of the categories of 'evidence and evidence-based practice', 'research', 'practice', and 'education'. Nine articles were ascribed to the category of 'education', seventeen to 'evidence and evidence-based practice', twenty to 'research' and nineteen to 'practice'. This process resembles the scoping step of charting the data and is therefore presented in the result in table 2, as it constitutes a result of the literature study regardless of the further exclusions of material.

Due to the magnitude of the material it was decided that a further reduction was needed. Both parties agreed after scrutinizing the content of the categories by abstracts, with the focus being on evidence and evidence-based practice, that the most relevant articles were to be found in the category 'evidence and evidence-based practice'. One article was cast away as it bore no relevance to the aim of this study and one was not written in an occupational therapy journal thus landing the final number of articles at 16. In order to ensure the rigor of this result the remaining categories of 'education', 'practice' and 'research' were targeted in a renewed search for any individual articles that could be included to fit the discussion of evidence and evidence-based practice in relation to the concept of occupation. One article was added from the research pool and thus the number of articles landed at 17.

The scoping study aims at presenting an overview of all the reviewed material Arksley & O'Malley (2005). Therefore the number of articles constituting the body of this literature review is presented in table 3. The numbers marked (\*) represents articles found in more than one of the databases. Only one copy of the duplicates were pooled in the final selection but the appearance in more than one database is relevant to illustrate the full covering of the search.

Table 2:

Categories	Database			Selection and reduced selection		
	Pub Med	CINAHL	PsycINFO	Selection	Duplicates (Removed)	Reduced selection
Education	5	7	2	14	(5*)	9
Evidence & Evidence-based practice	6	8	9	23	(6*)	17
Practice	9	16	5	30	(11*)	19
Research	12	19	10	41	(21*)	20
<b>Total</b>	<b>32</b>	<b>50</b>	<b>26</b>	<b>108</b>	<b>43</b>	<b>65</b>

#### Stage 5. Collating, summarizing and reporting the results

The analysis resembled the scoping method of mapping out the dominant areas of research by swapping this out with discussions related to the aim of the study. The data were analyzed in two ways. The densities of the terms in the body texts of the articles were used to both identify areas of text in which the terms were discussed and these areas were then measured in order to reflect their importance and relevance in the articles. These sections were analyzed for any definitions and discussions of the terms as well as scrutinized against the whole article. On this basis the definition (if present) was described and the general position on the discussion of the terms interpreted for each term in each article.

## 5. Result

The articles are categorized in the charting process into four different categories as can be viewed in table 2. Out of these categories and in accordance with the aim of this study, the result focuses on the category of ‘evidence and evidence-based practice’, which contains 17 articles. The search terms ‘evidence’, ‘evidence-based practice’ and ‘occupation’ have been located in the articles and the areas in which they occur have been analyzed and measured for their importance and impact on the whole article and for their relevance to the aim of this study.

The result of the study shows two different approaches to the topic of evidence-based practice. They are comprised of a position favoring a traditional evidence-hierarchy based on the single-hierarchy



model of evidence centered on RCT-studies<sup>4</sup> and a multidimensional perspective incorporating qualitative data to the evidence-base of occupational therapy practice. Articles linking the evidence-perspectives to the key concept of occupation are few and pre-dominantly found in the group that conveys a multidimensional perspective on evidence. Furthermore several articles predominantly found in the group championing EBP communicates a risk of losing funding for both occupational therapy research and occupational therapy practice if occupational therapists at all levels do not adhere to evidence-based practice guidelines. This includes adhering to the current evidence-hierarchy and to incorporate evidence-based practice into their daily professional lives. It seems more important here to identify and overcome the barriers towards the full integration of evidence-based practice rather than discussing how to balance its components with individual aspects of the profession. A summarize of definitions and discussions of terms in the 17 articles is presented in table 3.

#### Evidence-hierarchy

Of the seventeen articles identified through the category ‘evidence’ and ‘evidence-based practice’ the result identifies nine articles generally in favor of or positively aligned towards the current evidence-hierarchy and evidence-based practice while the other eight are generally more critical towards the use of the current evidence-hierarchy.

Only one article out of the total seventeen carries any kind of definition of what evidence is, while three articles include various hints towards how evidence is generated. All four of these articles are amongst the eight articles being critical towards the current evidence-hierarchy. Here the attitude towards the evidence-hierarchy is represented by the notion that there is a need for different types of evidence to answer different types of research questions at parity.

The definition that constitutes evidence should be significantly broadened to ensure that the available evidence is used for its relevance to the clinical encounter rather than its position in the biomedical evidence-hierarchy. None of the articles favoring the current evidence-hierarchy carries any definition of evidence. The attitude towards the evidence-hierarchy amongst these articles is affiliated with a wish to strengthen the profession by adapting its research in favor of the biomedical evidence-hierarchy. Researchers should strive for objective truth and in essence the claim is that the biomedical evidence-hierarchy exists to guarantee this.

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<sup>4</sup> Henceforth described as ‘the current evidence-hierarchy’. In some cases this evidence-hierarchy is also referred to as ‘the traditional evidence-hierarchy’, ‘the scientific evidence-hierarchy’, ‘the biomedical evidence-hierarchy’ or simply ‘the evidence hierarchy’.

**Table 3.** (Abbreviations: OT = occupational therapy, EBP = Evidence-based practice, OTs = occupational therapists, RCT = Randomized controlled trials)

Authors	Definition of evidence	Discussion of evidence Concept	Definition of EBP	Discussion of EBP concept	Definition of Occupation	Relating evidence and EBP to occupation
Bennett & Bennett (2000)	No	Systematic reviews and RCTs are identified as providing the strongest evidence. However the research methodology is to be determined by the type of clinical question for which there are different types of evidence hierarchies.	EBP is described as a combination of best evidence available through systematic reviews, clinical experience and client preferences to inform clinical decision-making.	A framework for evidence-based occupational therapy practice is presented. Barriers to EBP are identified and suggestions given on how to overcome them. The move towards evidence-based health care and the use of EBP as an instrument to achieve it is not questioned.	-	Suggests the use of clinical reasoning to determine the relevance of the evidence in relation to person, environment & occupation.
Blair & Robertson (2005)	(No) There is a hint at objective evidence (quest for proof and fact) vs. the search for meaning and understanding but no further definitions are given.	Evidence cannot be viewed through one totalitarian hierarchy that disqualifies all alternatives. There is a movement to broaden the understanding of what constitutes evidence.	Operational. EBP is described as practice primarily based on knowledge derived from research literature and deeply rooted in positivism.	Best practice cannot be attained solely through EBP. The soft complexities reflective, and reflexive practice are presented as a direct contrast to the hard complexities of EBP. Critical voices raise the concern that EBP does not empower the client rather it reinforces the power of the professional.	-	There is a risk that hard evidence derived from medical research rather than knowledge about occupational performance will be utilized through EBP.

**Table 3. (Continued)**

Authors	Definition of evidence	Discussion of evidence Concept	Definition of EBP	Discussion of EBP concept	Definition of Occupation	Relating evidence and EBP to occupation
Cusick, (2001)	Evidence is regarded as information derived from a multitude of sources with the aim of establishing facts. Evidence is best generated through research.	OTs should actively seek to promote a more scholarly debate about the nature of evidence and ways of knowing with links to philosophy, purposefully aiming to provide an equal position for qualitative evidence.	Operational. EBP is described as a primarily research-based practice in which research is referred to as the best way to find information that can be used to generate facts.	The EBP concept itself is not discussed. However the risk of diminishing the role of qualitative research through EBP is discussed and suggestions on a national position to promote diversity in practice are presented.	Aspects of occupation are identified but no attempt at defining occupation is presented.	OTs work with immaterial dimensions of a person that goes beyond observable aspects of performance and are an essential part of occupation and thus OT. It is essential that the utilization of EBP is consistent with the OT concepts of occupation.
D'Amico, Jaffe & Gibson, (2010)	No	The current evidence-hierarchy is readily accepted. No alternatives are considered.	No	There is a call for OT practitioners to seek and provide high-ranking evidence for OT in mental health care.	-	Mental health care research does not link occupational engagement to health factors. Rather it focuses on the benefits of occupational justice and participation on well-being and community integration.
Dirette, Rozich, & Viau, (2009)	No	The current evidence-hierarchy is readily accepted. No alternatives are considered.	EBP is defined through bringing research knowledge into practice.	EBP is presented as congruent with the OT code of ethics. The lack of high-ranking research in OT journals means limited access for practitioners to such evidence.	-	-

**Table 3. (Continued)**

Authors	Definition of evidence	Discussion of evidence Concept	Definition of EBP	Discussion of EBP concept	Definition of Occupation	Relating evidence and EBP to occupation
Hammell, (2001)	No	There is a discrepancy between the philosophy behind the current evidence-hierarchy used to form guidelines for practice and the philosophy of client-centered practice. Qualitative research can fill that gap.	EBP is described as aligned with the revised EBM formula considering clinical experience and client preferences.	Guidance as to how to incorporate client-centered values into the evidence-base used to guide practice is both inadequate and deficient.	-	Qualitative research can assist OT's in creating services to help enabling humans to a meaningful life and participation in meaningful occupations.
Ilott, Taylor & Bolanos, (2006)	No	To create more evidence and add to the knowledge base respect for all sources of knowledge is required.	EBP is described as utilization of the best available research evidence to guide best practice.	OT's should take a proactive stance on the development of EBP making it available for every OT in a global perspective. Some barriers for globalization are identified.	-	-
Kristensen, Persson, Nygren, Boll & Matzen, (2011)	No	Evidence derived from qualitative research should be regarded as equal to that of evidence derived from the current evidence-hierarchy.	EBP is described as the integration of best available research evidence, client preferences and clinical expertise into practice.	There is a need for discussion on how to balance the current conflict between the clinical relevance and value of research evidence with the position in the current evidence-hierarchy.	Occupation is identified as everything people do during everyday life.	Occupation is discussed in the context of evidence for the use of everyday life occupations and client-centered approach.

**Table 3. (Continued)**

Authors	Definition of evidence	Discussion of evidence Concept	Definition of EBP	Discussion of EBP concept	Definition of Occupation	Relating evidence and EBP to occupation
Law, et. al. (2004)	No	Accepts and promotes the current evidence-hierarchy and rejects any criticism by stating that there are other valued sources of evidence to be utilized if there are no higher standard evidence available.	EBP is described in accordance with EBM where information is derived from the interaction between clinical experience, best available clinical evidence from systematic reviews and client preferences.	It is more important to inform practitioners how to correctly implement EBP in their practice than discussing the balance between the individual components of EBP. Advises the use of systematic reviews and focused review as a superior strategy to guide EBP.	No definition is presented but examples of occupations are presented in relation to their role in therapy interventions.	There is considerable evidence supporting participation in chosen occupations as a fundamental part in human health and well being and that occupational deprivation leads to increased stress, physiological changes and decreased health.
Lloyd, Bassett & King, (2004)	No	The current evidence-hierarchy is readily accepted.	EBP is defined as practice based on empirical evidence of efficacy with RCT's presented as the gold standard.	EBP is essential if OT is to retain its status in the market for health care. Managerial factors as well as the discrepancy between the heterogeneity of client interventions and the standardizations and homogeneity of RCTs are identified as barriers to EBP.	No	Suggestions are given that qualitative data can answer questions about occupations that RCTs cannot but the argument is not elaborated.
Lopez, Vanner, Cowan, Samuel & Shepherd, (2010)	No	The current evidence-hierarchy is readily accepted.	EBP is identified as a separate facet of intervention planning affiliated with utilizing scientific evidence in the designing of interventions.	There is a need for more research and skills in research analysis to support EBP. Economic restraints increase the need of research evidence to prove efficacy of interventions to third-party payers.	No	Due to the complex nature of human occupation research evidence is not easily quantified using reductionist research models leading to a lack in generalizability between clients.

**Table 3. (Continued)** OS = occupational science

Authors	Definition of evidence	Discussion of evidence Concept	Definition of EBP	Discussion of EBP concept	Definition of Occupation	Relating evidence and EBP to occupation
McKinstry, Allen, Courtney & Oke, (2009)	No (In today's health care systems where evidence equals power OT-organizations need evidence to exert power and gain influence).	The current evidence-hierarchy is readily accepted and promoted. No alternatives are considered.	No	It is expected that evidence be used to guide all levels of practice and decision-making in health care services. An accreditation system has been implemented in Australia to identify evidence-based practitioners.	No	-
Morley, et. al. (2011)	No	OS should utilize qualitative, quantitative or mixed method research methodology to affect OT practice in all levels of society, internationally as well as nationally.	Operational. Clinical guidelines used to improve the quality and appropriateness, effectiveness and efficiency of care are established through EBP.	There is a need for building information systems that ensure the use of standardized assessments to promote EBP. Funding could be diverted from OT and OS to other services if we do not adhere to the new outcomes-focused policies.	No	Occupation may potentially not be included in the forming of any EBP guidelines if OS research does not measure any OT intervention-based outcome. All OS research should be directly related, and transferrable to OT practice.
Reagon, et. al. (2010)	Currently evidence is defined as a process in which accumulation of objective facts generates authoritative knowledge. 'Multiple truths' is presented as an alternative to form an evidence base for OT.	The definition of evidence should be broadened. Evidence should be used for its reliability and relevance to the clinical encounter rather than its rank in the current evidence-hierarchy.	Operational. EBP is associated with a collectively applicable evidence base used to underpin clinical guidelines for large client groups.	Although EBP has the potential to raise the profile of OT and to challenge weak points in practice there is a discrepancy between EBP and the client centered holistic approach of OT.	No	-

**Table 3. (Continued) EBM = Evidence-based medicine**

Authors	Definition of evidence	Discussion of evidence Concept	Definition of EBP	Discussion of EBP concept	Definition of Occupation	Relating evidence and EBP to occupation
Rosenwax, Semmens & Holman, (2009)	No	In OT evidence is currently based on ad hoc principles and opinions. OT as a profession is encouraged to use the current scientific evidence-hierarchy.	EBP as referred to EBM integrates clinical experience with clinical evidence derived from systematic research with RCT's as the gold standard.	It is essential for OT in order to maintain its professional status to use EBP to guide clinical practice. National guidelines are welcomed.	No	-
Shaw & Shaw (2011)	No	The EBM hierarchy exists to guarantee the highest reliability of the sources of evidence. It does not make sense to equalize sources of evidence. Researchers should strive for objective truth. Only the most rigorous methodology will secure that generalizations will work.	EBP is defined through the EBM pyramid and integrates multiple sources of information such as clinical experience with outcome information.	EBM and thus EBP are essential to guide ethical OT practice. The discrepancy between EBP and OT philosophy is a perceived discrepancy that can be corrected by raising awareness of and participation in high quality research.	No	-
Tomlin & Borgetto (2011)	No, but different forms of research methodologies are explained in detail.	There is a need for different types of evidence to answer different kinds of questions at parity. This requires a new way of looking at evidence. A model is presented which considers all evidence-methodologies equally important while retaining rigor within but not across	EBP is described as aligned with the revised EBM formula considering clinical experience and client preferences.	There is a need to align the theoretical structure of EBP with the practice of OT interventions.	No	Occupation and the lived experience of clients form a basis of occupational therapy that may not be easy to align with the current underlying biomedical evidence-hierarchy of EBP.

## Evidence-based practice

A total of eleven articles are positive towards the implementation of evidence-based practice. The nine articles being in favor of the current evidence-hierarchy also favors evidence-based practice in its current form and defends the use of the current evidence-hierarchy as well as promoting the use of evidence-based practice to guide occupational therapy practice. They are primarily preoccupied with overcoming what they identify as barriers preventing the full transition to evidence-based practice. One article mentions an accreditation system already in place in Australia accessible by public that can be used to identify occupational therapists that are evidence-based practitioners. General for this group of articles is their championing of evidence-based practice as a means of generating funding, political goodwill and a future place for occupational therapy within evidence-based health care.

Of the eight articles being critical towards the current evidence-hierarchy six are also critical of the implementation of evidence-based practice. These articles claim that the evidence-based practice adherence to the current evidence-hierarchy constitutes a threat to the diversity of occupational therapy practice including the qualitative methodologies associated with reflective and reflexive practice and phenomenology. There is a focus on how to balance clinical relevance and client values with research evidence through the use of the current evidence-hierarchy and that evidence-based practice as an effect of that is biased towards the authority of the professional. An alignment between the practice of occupational therapy and the theoretical structure of EBP is needed. One article presents a new model for evaluating evidence, which allows for multidimensional methodologies. Interestingly two of the articles being critical towards the current evidence-hierarchy are positive towards the concept of evidence-based practice, which seems to indicate that not all occupational therapists sees evidence-based practice as solely affiliated with providing evidence by use of the current biomedical evidence-hierarchy.

## Relation to occupation

There is a general alignment between the position towards the current evidence-hierarchy, evidence-based practice and the inclusion of occupation into the articles discussions of these terms. Ten out of eleven articles that are positive towards evidence-based practice either have no discussion of the concept of occupation (don't mention the word at all) or give very little attention to it. Morley, Atwal & Spiliotopoulou, (2011) is the only one of these articles which connects occupation with the discussion of evidence-based practice stating that occupation-based interventions may not be included in EBP guidelines if occupational science research is not directly transferrable to practice. One of the eleven articles however does have an extensive inclusion of



occupation in the discussion and identifies that there is strong evidence for occupations playing a fundamental role in the experience of health and well-being (Law, Pollock, & Stewart, 2004).

Common for the six articles being critical towards both the current evidence-hierarchy and evidence-based practice is that the discussion of occupation is linked to the position on the current evidence-hierarchy. Furthermore, problems with aligning knowledge about occupational performance and client values with evidence-based practice are identified. This is, according to the criticism, due to the underlying biomedical evidence-hierarchy and the consequent preference for hard evidence. The attitude towards the implementation of evidence-based practice in relation to occupation is that the utilization of evidence-based practice should be consistent with the occupational therapy concept of occupation. Clinical reasoning is suggested as a means to determine the relevance of evidence in relation to occupation. As a holistic and complementing strategy qualitative research is proposed as a methodology that can assist occupational therapists in creating services focusing on human participation in occupations and the experience of a meaningful life. One out of these six articles fails to carry any discussion or mentioning of occupation (Reagon, Bellin & Boniface, 2010).

## 6. Discussion

This study set out to scope the field of peer-reviewed occupational therapy journals for any discussions regarding the transition to evidence-based practice, and how to bring scientific evidence into occupational therapy and to what extent the main concept of occupation was related to the notions of evidence found.

The evidence-hierarchy

Set against the backdrop of science outlined in the background the result reflects the two key philosophical, ontological and paradigmatic positions behind occupational therapy. This does not mean that authors representing one group are entirely committed to one way of reflecting upon occupational therapy. It rather means that the politically guided implementation of evidence-based practice enforces upon occupational therapists the biomedical approach and its corresponding position towards the current evidence-hierarchy. While some sees this as non-problematic others see it as incoherent with the multidimensional approaches that are present in both occupational science and the professional knowledge guiding occupational therapy practice. This key difference has strong ties to the focus on occupation and the use of evidence and evidence-based practice as tools to enable occupational therapy practice. Since the introduction of occupational science and the focused studies on human occupation there has been a broadening development of the theoretical

base of occupational therapy as well as the practice of occupational therapy (Bendixen, et. al., 2005; Christiansen & Baum, 2005; Kronenberg, et. al., 2011; Morley, et. al., 2011). There is a risk of overlooking and missing this development in occupational therapy in the future, since much of the research in this area will potentially not be incorporated into the databases used to guide evidence-based practice. In an environment of funding and reimbursement policies qualitative research seems less valued and recognized both internally in the profession and from the outside medical community and policy-makers (Cusick, 2001; Kronenberg, et. al., 2011; Lloyd, et. al., 2004; Lopez, et. al., 2010; Rosenwax, et. al., 2009). This circumstance could be seen as rather ironic as much of occupational therapy research use qualitative methods.

### Evidence-based practice

In this light the call for adhering to evidence-based practice, overcoming the barriers to its implementation and utilizing more occupational therapy research of higher internal value seems reasonable if occupational therapy is to retain and further build upon its position within health care guided by a system of policies whose focus is to optimize the human functional health through biomedical science and medicine guided by economic rationales (Kragh & Pedersen, 1991). Such a focus of occupational therapy also corresponds very well to the biomedical viewpoint in which participation in everyday life activities and well-being is seen as an effect of enabling bodily functions such as seen in many in-ward settings (Medin & Alexandersson, 2000).

### Occupation

The lack of incorporating the concept of occupation into the discussion about the evidence-base of occupational therapy found in the majority of articles in this study can be seen as an effect of the acceptance and promotion of evidence-based practice and the current evidence-hierarchy as guiding principles for occupational therapy practice. It bears with it testimony of the struggle that many clinicians face when trying to toggle between the holistic foundation of occupational therapy and the biomedical reality in which they work (Wilding & Whiteford, 2007). This is highlighted by the notion that occupation-based interventions may not be included in evidence-based practice guidelines if occupational science research is not directly transferrable to practice (Morley, et. al., 2011). Such a position emphasizes occupational therapy as a passive recipient in the world of health care in which health care politics are allowed and invited to change occupational therapy but where occupational therapy has no direct influence on making fundamental changes regarding health care policy. McKinstry, et. al. (2009) does mention that in a world of health care where evidence equals power occupational therapy organizations needs evidence to exert power and gain influence, but this can be viewed as an extension of the already dominant system since they do not question the

use of the current evidence-hierarchy. Rather they promote the implementation of an accreditation system by which lists of evidence-based practitioners are made publicly accessible by OT Australia (McKinstry, et. al., 2009).

#### ‘The paradigmatic clash’

While the biomedical research is predominantly occupied with the technical and analytic methodology there are increasing voices within occupational therapy as well as from similar fields of study with roots in critical social theory and occupational science that goes beyond it and incorporates or draws from concepts such as *phronesis* or practical wisdom (Persson & Erlandsson, 2005; Kronenberg, 2013, in press; Schwartz & Sharpe, 2010). This loose movement has voices both in occupational science circles and in social movements involving occupational therapy practice such as ‘Occupational Therapy without Borders’. It contains criticism of both the internal and external forces responsible for the systemic conceptualizations used to narrow down the study of human occupation to comparable objective factors of interest important to its role in the western world productive societies (Davis-Floyd, 2001; Hammell, 2009; Kronenberg, et. al., 2011; Kronenberg, 2013, in press; Persson & Erlandsson, 2002; Townsend & Polatajko, 2007; Wilcock, 2006). Some claim that the circular system of science, policy and economy described in the background carries with it an underlying aggressive demand for control which has the potential to split fact from value and science from humanity at the risk of detaching from health care such fundamental pillars of society as silent values, practical wisdom and tacit knowledge (Engel, 1992; Hammell, 2011; Persson & Erlandsson, 2002; Petersen, 2009; Polanyi, 1974; Schwartz & Sharpe, 2010). As an example from the articles reviewed in this study Blair and Robertson (2005) criticize evidence-based practice for its preference for knowledge generation that does not cover the full insight into social reality and prevents ideas of social inclusion from reaching practice. Rather than identifying occupational therapy as a profession within the biomedical realm; health-promotion, health care, ill health prevention and the treatment of illness are viewed as equal factors in the experience of health and well-being, meaning and value and their role in enabling human occupation and participation (Cusick, 2001; Hammell, 2001; Persson, 2001). Such notions, which are widely described in occupational science, and occupational therapy education literature, draws on the emerging holistic paradigm underpinning the multidimensional approaches to knowledge generation in occupational science and occupational therapy practice and recognizes the need for evidence-based practice (Christiansen & Baum, 2005, 2013; Persson, 2001; Persson & Erlandsson, 2005). But evidence-based practice should not come at the cost of the qualitative research methodology, nor a wider understanding of knowledge generation originated at the very invention of occupational therapy (One In Five).

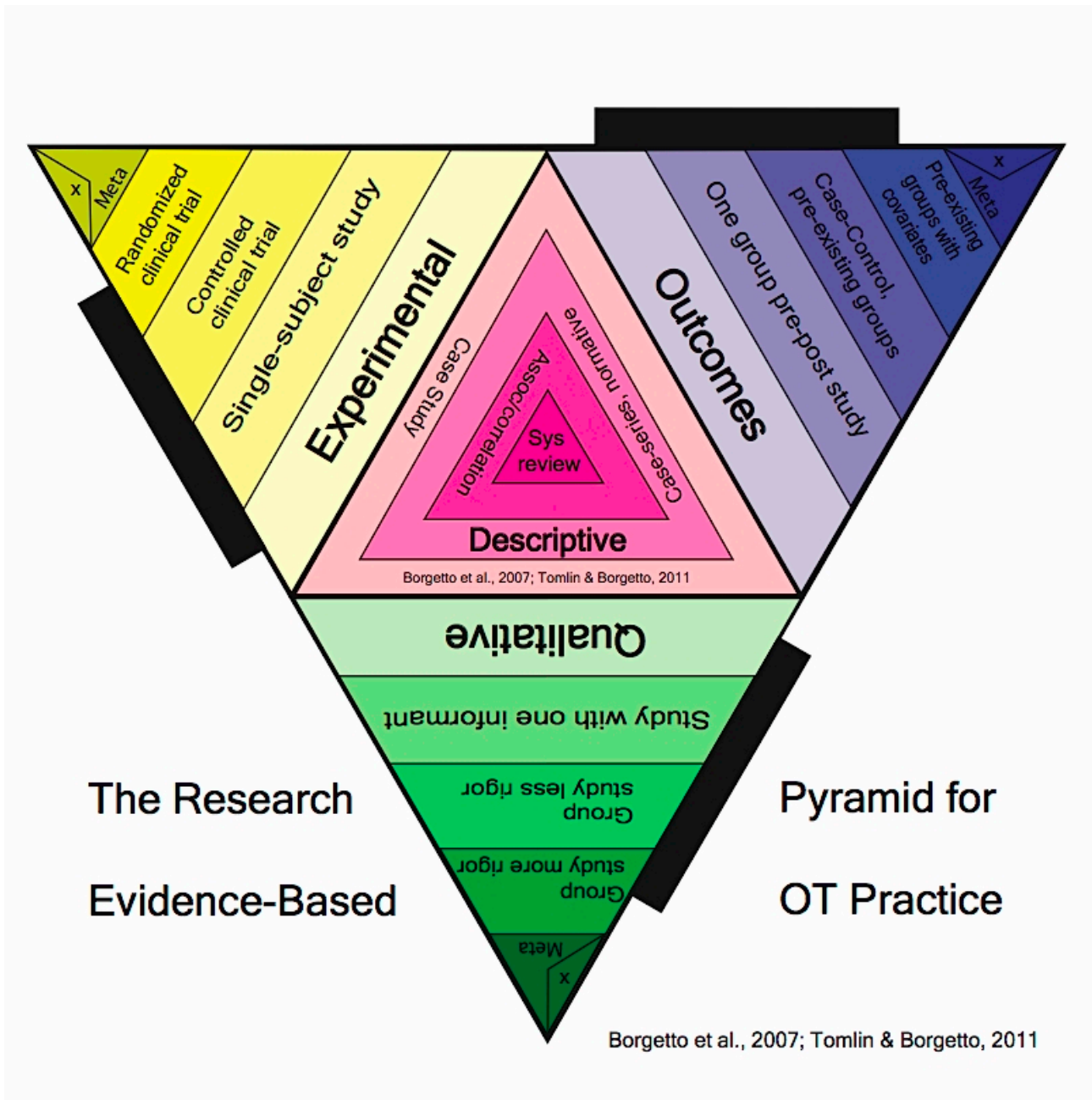
This movement also has a high political potential, which involves arguments for the inclusion of occupational science concepts such as "occupational balance/imbalance", "occupational justice/injustice" (Wilcock, 2006), and the Nordic concept of 'ecopations' (Persson & Erlandsson, 2002) into occupational therapy practice. Rather than relying on retaining its position within the health care hierarchy this movement sees occupational therapy as a possibilities-based practice that has the potential to interact with and transform health care policy and ultimately define occupational therapy within the broader frame of health (Kronenberg, et. al., 2011).

The introduction of alternative ways mentioned by Upshur (2003) in which to evaluate evidence is reflected by several articles expressing a wish for implementing qualitative research into the evidence-base of evidence-based practice (Blair & Robertson, 2005; Cusick, 2001; Hammell, 2001; Ilott, et. al., 2006; Kristensen, et. al., 2011; Morley, et. al., 2011; Reagon, et. al., 2010; Tomlin & Borgetto, 2011). Morgan (2007) and Tomlin & Borgetto (2011) demonstrate that the intersubjective relations underlying occupation, client centeredness and clinical reasoning as a whole cannot be meaningfully quantified. This means that by adhering to the current evidence-hierarchy these soft parts of evidence-based practice will potentially vanish leaving only the hard scientific research evidence to guide practice (Blair & Robertson, 2005). As an alternative Tomlin and Borgetto (2011; Table 5) presents one such alternative model, the research pyramid, which is more closely aligned with the needs of occupational therapy research and practice, serving all three aspects<sup>5</sup> of evidence-based practice equally and by offering a more comprehensive ability to reveal gaps in evidence. Such a model reveals a potential in the way of thinking about occupational therapy as an equal profession in health and health care. Instead of biasing the practice towards the authority of the professional and the professional health care environment this model aligns itself closely with the three central concepts of clinical reasoning (Mattingly & Fleming, 1994). This allows for the client to be viewed as central in a 'non-hierarchical' system where all types of research evidence valuable for the practice of occupational therapy can be utilized at parity but in which each type of research evidence has its own hierarchy (Tomlin & Borgetto, 2011). If we take an intersubjective approach by adopting and equalizing different evidence hierarchies based on different approaches then we can create an atmosphere of transition of knowledge in which all three parts of evidence-based practice can be utilized to their full potential (Davis-Floyd, 2001; Tomlin & Borgetto, 2011). Operating with multiple sources of evidence at parity could also play an important role in avoiding publication bias (Backman, 2008).

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<sup>5</sup> All three aspects of evidence-based practice being *research evidence*, *clinical expertise* and *client preferences*.

Table 4: *The research pyramid for Evidence-Based Occupational Therapy Practice (With kind permission from George Tomlin).*



N.B.: This is a version that can be printed, cut out and formed to the shape of a pyramid with four sides.

## Methodological discussion

According to Arksley and O'Malley (2005) incorporating a qualified librarian in the process of developing a search strategy is likely to generate a more precise search through databases than a researcher can accomplish on his/her own. Whether the choice to utilize a librarian in this study would have resulted in more articles being implemented in the final result is unknown. Similarly the search through reference lists and the hand searching of key journals as well as utilizing relevant organizations and conferences were also omitted due to time constraints.

It is impossible to create an entirely uniform approach in the charting of the data in a scoping study of this kind due to the analytical approach of different people. To secure a more rigorous result an occupational therapy researcher was incorporated in this process and the material analyzed and charted separately and then deliberated by both. It is unlikely however that the analysis of the same material would be exactly identical if conducted by other researchers. As an example, the choice to abandon the further analysis and presentation of the complete material in favor of a more thorough analysis of the 17 articles deemed most relevant can by right be questioned for not rigorously following the methodology of the scoping study although it can also be argued that they do represent the 'best fit' relative to the research question (Arksley & O'Malley, 2005).

In the analysis the subjective choice was made to focus on mapping out text parts containing the key concepts identified in the aim of the study and analyze them for any definitions and discussions despite the diversity of the main focus areas of the articles. This choice served as a tool to avoid any interpretative inconsistencies and strengthened the identification of key text areas that were marked and incorporated in the summaries of each article. Such a consistency makes it possible to amongst others compare material across different intervention types, identify gaps in research as well as identifying 'new frontiers' (Arksley & O'Malley, 2005).

All in all this study is reproducible to an extent that others can conduct the same literature search and arrive at a similar charting process with the same amount of articles included if the search was to be conducted for the same time period. The result reflects the aim of the study in a way that the core concepts are also utilized through the analysis of the articles in the result and traceable through the discussion. Understanding the importance of science in society and the circular impact of science, economy and politics is an important prerequisite to understanding the implications of evidence-based practice. For this reason as with occupation it is explained more thoroughly in the background, something that most articles about evidence-based practice neglects or bypass entirely.

## 7. Conclusion

Evidence-based practice introduces into the world of occupational therapy practice the possibility of science-based practice. At the same time evidence-based occupational therapy requires the utilization of knowledge from both client and therapist in the decision-making process without specifying how evidence informing client centered practice is to be congruent with the evidence-hierarchy devised to inform science-based practice. Currently discussions center around evidence-based practice and what kind of evidence should be deemed relevant for occupational therapy practice while retaining the broad perspectives derived from the study of human occupation in occupational therapy and occupational science. How occupational therapists relates to the different approaches in the studies of human occupation through the discussions of evidence and evidence-based practice as well as their potential influence on occupational science and occupational therapy practice is an important factor in trying to determine how occupational therapy can be positioned in the future world of health care and ultimately define occupational therapy within the broader frame of health.

In countries with private funding for health care there is a harder focus on measurable results that reflects on services like occupational therapy (Davis-Floyd, 2001; Kronenberg, et. al., 2011). What if the research becomes guided by fear of losing funding rather than by best practice seen from a theoretical and client centered perspective? Which is the greater threat? That we lose occupational therapy jobs and funding due to not adhering to the biomedical paradigm controlled EBP policies/guidelines? Or is it the palpable risk that we are going to lose the holistic foundation of theory and practice by adapting occupational therapy practice to a world of biomedical evidence hierarchies?

Based in the earlier mentioned circle of science, policy and economy, it can be argued that the current single-hierarchy model of evidence potentially bias research evidence towards an oversimplification of complex social needs and human occupations into comparable objective factors of interest important to their role in the productive societies of the western world (Hammell, 2009; Townsend & Polatajko, 2007). Are we as occupational therapists satisfied with that? Shouldn't it be a primary objective of occupational therapy to involve the knower, in the understanding of the human being we term 'client', in all acts of understanding as part of a continuing endeavor to make sense of the totality of her/his life experiences obtained through human occupation (Hammell, 2001)?

## 8. Implications for future studies

Scoping the approach to the discussions of the implementation of evidence-based practice is like catching a historical insight into the dynamics involved in the process. In an interview regarding the latest evolution into disco the American musician and producer Nile Rodgers went through the history of music in his neighborhood. He said two things of great importance. One being that art is timeless and the other that as people influence each other and new things start to happen life evolves, it changes and we can't help it. You come to a place that is beyond where you started, and you evolved. In a way you go back to go forward. Nile Rodgers implies that we cannot recreate the past but by creative and curious investigation into the past we will invariably get inspired in a way that will affect our choices of how to create the future from the present (The Collaborators: Nile Rodgers, 2013).

The study of the history of occupational therapy and in this case the move to evidence-based occupational therapy is important when considering the further evolution of occupational therapy in theory as well as practice. Therefore a larger study than the current one is needed. This study could very well be expanded to not only incorporate the 65 articles that were charted but also to incorporate a qualified librarian to expand the search and incorporate not just peer-reviewed occupational therapy literature but also literature concerning occupational therapy from other professional journals, interviews of key practitioners and researchers as well as insight derived from conferences, and organizational and national statements regarding evidence and evidence-based practice for occupational therapy. The time period can also be expanded. For any future study however it is recommended that resources and time be considered at an even earlier stage in the process than for this one.

Outside the realm of occupational therapy evidence-based practice affects all health care and an even larger perspective for this kind of scoping study is to incorporate all health care professions to investigate different areas of health care, like for example an interdisciplinary inquiry into evidence-based mental health care.



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